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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,962	08/15/2004	Scott L. Nielson		4961

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EXAMINER
FERRIS III, FRED O

ART UNIT	PAPER NUMBER
2128	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,962	NIELSON ET AL.	
	Examiner	Art Unit	
	Fred Ferris	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 August 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-30 have been presented for examination based on applicant's disclosure filed 17 August 2004. Claims 1-30 are currently pending in this application and stand rejected by the examiner.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

MPEP Section 608.02(d) [R-2] "Complete Illustration in Drawings" recites the following:

"37 CFR 1.83. Content of drawing.
(a) The drawing in a nonprovisional application must show ***every feature*** *of the invention* ***specified in the claims****. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation"*

In this case, none of the drawings (Figs. 1-3) show elements or features of the "key reference points" or the "combining the morphing" as claimed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 21-30 are rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter.

*Specifically, independent claim 21 is merely drawn to nonstatutory descriptive material since the claimed "computer program" in this case does not appear to impart any functionality. (i.e. not a computer program product or **executable instructions** embodied on a computer-readable medium that when executed by a processor to perform the claimed subject matter)*

MPEP 2106 recites the following supporting rational for this reasoning:

*"Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when **employed as a computer component**. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data. **Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se**. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is **recorded on some computer-readable medium** it becomes structurally and **functionally interrelated to the medium** and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."*

In this case, applicants have not claimed computer (program) code that is embodied on a computer-readable medium and specifically employed as a computer component to be executed on a processor and perform the claimed limitations.

Dependent claims 22-30 inherit this defect.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. *Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.*

Specifically, applicants have claimed features relating to "key reference points", "morphing the digitized nail surface", and "combining the morphing" in independent claims 1, 11, and 21, that are not sufficiently enabled by the specification. For example, while the specification makes vague reference to the phrase "key reference points, [para: 0009, 00013], it appears to be completely silent on specifically how these key reference points are determined, why the points are considered "key" points, and what the points are referenced to. In fact, the points appear to simply be arbitrarily selected points since the specification gives no clear and concise written description of the claimed "key reference points". Further, the specification does not set forth any techniques for realizing the claimed "morphing the digitized nail surface" or "combining the morphing" as recited in the claims. While the specification again mentions that morphing is accomplished mathematically [para:0013], it contains no specific

mathematical teaching of <u>how</u> the morphing process is accomplished. Similarly, there is no teaching of how the claimed "combining of the morphing" is mathematically accomplished. Hence, a skilled artisan would be at odds to determine how to accomplish the claimed "morphing" of the digital nail surface or "combining the morphing" from the written description contained in the specification.

Claims 11 and 21 further lack enablement for the actual process of creating a physical nail product. For example, claim 11 appears to be a product by process claim for creating an actual (physical) nail object (product). However, there are no actual process steps that would lead to the actual nail product and the specification is again silent on any actual process for creating physical nail product. Claim 21 similarly recites a computer program for creating a nail object, but the program as claimed, would at best only yield a nail design and not a physical nail object.

Independent claims 1, 11, and 21 further recite a preferred three-dimensional artificial nail object that "conforms to an expected result". However, the specification is again silent on specifically <u>how</u> the nail object would conform to an expected result, <u>what</u> the expected results would be, and what that actual conforming would consist of.

Dependent claims 7, 8, 17, 18, 27, and 28 include limitations relating to "mathematically manipulating the three-dimensional point array" to become more "similar" along the x, y, and z axis, but the specification is again completely silent on <u>how</u> the point array is mathematically manipulated in order to achieve the claimed similarity along the x, y, and z axis.

Accordingly, a skilled artisan would be at odds to determine how to realize the claimed features noted above from the written description contained in the specification.

Dependent claims inherit the defect of the claims from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,123,983 issued to Yogo et al in view of "Warp-guided object-space morphing", Carmel et al, The Visual Computer, 13:465-478, 1997.

Yogo teaches certain elements of the present invention as currently claimed in independent claims 1, 11, and 21 as follows:

- automatically create a three-dimensional nail object by: (Figs. 6-9)

- starting with a three-dimensional array of data representing a digitized nail surface (Column 5, lines 17-27, 53-55, Figs. 5, 6)

- measuring key reference points along the nail surface along the X-axis, Y-axis, Z-axis and the periphery of the digitized nail surface (in this instance the "key reference points" are interpreted by the examiner as simply finding the peripheral nail points (e.g. the boundary of the fingernail) and can be determined by multiple methods as disclosed by Yogo in column 5, lines 27-34.

Yogo teaches creating a customized thee-dimensional artificial fingernail (column 3, lines 7-17, 29-35, column 6, lines 24-46) but does not expressly teach morphing the digitized nail surface into and artificial nail surface.

Here the examiner submits that applicants appear to be simply claiming the process of morphing between a known object and a target object. In this instance the target object appears to simply be a "preexisting artificial nail surface" and the known object is the measured "digitized nail surface".

Carmel teaches morphing between a known object and a target object. (pp. 465 beginning at line 6, Sections 2 and 3)

The process of morphing between a known object and a target object is very well-known in the morphing art and is available as a standard feature with most popular commercially available morphing software packages such as FantaMorph, Morpheus, PolyMorhph3D, etc. (See: Polevoi pages 114-116, for example) Hence a skilled artisan tasked with morphing a measured nail object to a target (preexisting) nail object would have knowingly modified the teachings of Yogo relating to digitally measuring and existing fingernail object, with the teachings of Carmel relating morphing between an object and a target object, motivated by the need deform the original (measured) object the to match the preexisting target object.

(Note: Yogo teaches creating a final customized and preferred three-dimensional artificial nail object that conforms to an expected result column 3, lines 7-17, 29-35, column 6, lines 24-46, and that the nail object will fit over the digitized nail surface and create a desired artificial nail appearance, column 3, lines 7-17, 29-35, as cited above)

Regarding dependent claims 2-6, 12-16, 22-26: Yogo discloses the elements relating to three dimensionally measuring and digitally storing points along a nail surface and determining key (boundary) reference points as noted above. (Column 5, lines 17-27, 53-55, Figs. 5, 6)

Regarding dependent claims 7, 8, 17, 18, 27 and 28: Carmel teaches morphing an object by manipulating the x, y, and z axis (Section 9, inherent to 3D morphing, e.g. becoming more similar, multiple iterations of morphing) and would have knowingly been implemented by a skilled artisan using the reasoning set forth above.

Regarding dependent claims 9, 10, 19, 20, 29 and 30: Yogo teaches customized nail objects from digitized surfaces (column 3, lines 7-17, 29-35) while Carmel teaches morphing an object to a target (pp. 465 beginning at line 6, Sections 2 and 3) as noted above.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"3D Model Retrieval with Morphing-based Geometric and Topological Feature Maps" Yu et al, Proceedings CVPR 03', IEEE 2003 teaches object measurement and morphing.

"Interactive Shape Metamorphosis", Chen et al, Symposium on Interactive 3D Graphics, ACM 1995 teaches object measurement and morphing.

"3D Shape and Reflectance Morphing, Sato et al, System and Computers in Japan, Vol. 29, No. 3, 1998 teaches object measurement and morphing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached at 571-272-2279. The Official Fax Number is: (571) 273-8300

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